PANEL 2 – PORT CAPACITY

MODERATOR
Rex Edwards, Transportation Consultant

COORDINATOR
Joedy Cambridge, TRB / Marine Board

CHALLENGE SPEAKER
M. John Vickerman, TransSystems Corporation

PANELISTS
Jim Brennan, Norbridge Consulting

Asaf Ashar, National Ports and Waterways Institute, University of New Orleans

Lauren Kotas, Canaveral Port Authority and American Association of Port Authorities

James McCarville, Port of Pittsburgh

SUMMARY OF PANEL PRESENTATIONS / DISCUSSION
This panel discussed the importance of port capacity development to the MTS from the perspective of port operators and users. The key issue was whether current and projected port capacity can accommodate future freight flows, and what policies are necessary to meet that demand. Panel members included consulting engineers and researchers, as well as port management personnel.

M. John Vickerman
The Challenge Speaker was John Vickerman, a port consultant with TransSystems Corporation. Mr. Vickerman noted that world trade is projected to continue its strong expansion resulting in 6-7 percent annual growth in U.S. container volumes. It will be difficult to match the doubling or tripling of container volumes over the next 20 years with a comparable increase in berths and terminals with land availability a major impediment. Will the U.S. port system be able to expand to meet this demand? How can the anticipated congestion be avoided or managed?

Increasing container vessel sizes pose another challenge to U.S. ports, as are limitations of the Panama Canal, landside access, and intermodal transfer facilities. Port productivity varies significantly between ports with Asian ports leading the way. There may be new technologies that will increase productivity with information technology perhaps the most important. Operational efficiencies such as transshipping containers to feeder vessels and barges might also increase capacity. Mr. Vickerman concluded by cautioning that a failure to make necessary improvements to the U.S. port system will have a significant impact on the country's trading and logistical capabilities.

Jim Brennan
The first speaker was Jim Brennan who directs the maritime and port consulting practice for Norbridge, Inc. He identified six major drivers of port capacity: physical, operational, environmental, security, commercial and financial. Physical elements of port capacity include limitations directed by equipment capabilities, land and waterfront availability, and harbor depths. Operational factors relate to how efficiently physical elements are utilized, while environmental factors

constrain utilization and are growing in importance. Security might ultimately be the most important of all considerations based on recent events with the impact on capacity depending on the nature of new security policies.

Mr. Brennan stated that commercial and financial drivers are often under appreciated and may have had the greatest impact on capacity in recent years. Commercial factors relate to the way the shipping lines behave and the way they decide to use a port terminal. He identified SeaLand's terminal in Hong Kong as a prime example of how capacity can be maximized if the user has berth productivity as a commercial objective. Financial considerations affect capacity by limiting the most efficient utilization of terminals because shippers and carriers are unwilling to pay the premium for service enhancements. If existing port and vessel capacity were better utilized, the high cost of building new mega-ships and mega-ports could be minimized.

Asaf Ashar

The next speaker was Asaf Ashar, Professor-Research for port and intermodal system operations at the National Ports and Waterways Institute of the University of New Orleans. Mr. Ashar noted the adequacy of the national port system depends on both quantitative factors (capacity) and qualitative factors (capability). Capacity issues relate to the amount of infrastructural and equipment components available at port terminals and connections to terminals; capability relates to their size – whether current terminals and connections are appropriate for handling the ships and cargoes they are intended to.

Mr. Ashar identified the key "capacity" elements of a port terminal (berth, yard and gate) and future changes to their use as they affect capacity. New technologies such as automated guided vehicles and new cranes can increase the productivity of berths, while user fees, improved container stacking, and increased use of off-terminal facilities can boost yard and gate capacity. Improvements in port capability will depend on future service patterns as affected by factors such as the expansion of the Panama Canal and increased transshipment and feeder services. He claimed that larger future ships are associated with increasing ship-to-ship transfers (transshipment), suggesting to consider for this purpose floating terminals, based on barges as the vehicle that transfer containers between ships. Less ambitious technology that may dramatically improve productivity is multiple lifting of containers, which is already partially practiced in several foreign terminals, where recent gantry cranes are specified at 72 tons.

Lauren Kotas

Lauren Kotas, the director of marketing and trade development for Port Canaveral, a major cruise port in Florida, was the third speaker. She stated that the cruise business is very profitable and is projected to continue strong growth in the U.S. market. Ports are competing hard to attract cruise services. The cruise industry has port needs that differ significantly from other port users. Although the capacities of the largest cruise ships continue to increase, harbor depth is not a significant problem due to the relatively low drafts of cruise vessels. Capacity requirements for cruise vessels extend well beyond the terminal where passengers are

transferred between ship and shore. Good landside infrastructure is essential. The entire port experience must be friendly, safe, efficient and comfortable to satisfy high-paying vacationers. Off-port infrastructure and services are also important as the cruise experience starts when travelers leave their homes. Adequate airline services and ground transfer services are essential, as is good road access for the large segment of the market that drives to the port.

Other areas of importance to the cruise business include efficient ship provisioning requiring nearby service businesses and adequate dock space for truck transfer. Availability of large volumes of water, handling waste disposal, providing good road signage, and amenities for the large vessel crews are also unique requirements for cruise ships. The security of passengers is vastly more important than that of cargo, and security costs are high as a result. The events of September 11 required an additional $1.2 million for Port Canaveral, four times the amount originally predicted.

Developing facilities and infrastructure for the cruise industry requires long-range planning and requirements for new designs continue to expand. Improved terminal designs, advanced baggage handling systems, and high security landscaped parking lots are examples of recent advances at Port Canaveral. Requirements differ depending on the type of cruise market with vessel size and length of cruise as key considerations. The majority of new ships being delivered are not the mega-vessels, but mostly small-to-medium sized ships (2,100 passengers and less) which are faster and can provide longer voyages. Longer cruises require fewer port calls, but more baggage per person, while also creating more idle time for terminals. In conclusion, when considering increasing needs for port capacity, passenger movement needs should be included in planning, budgeting, and forecasting. Seaports are diversifying their operations beyond cargo in an effort to replace diminishing funding and to "earn their own keep."

Jim McCarville

The final panelist was Jim McCarville, Executive Director of the Port of Pittsburgh and current President of IRPT – the association of inland rivers, ports and terminals. Mr. McCarville noted the importance of political factors in the development of inland waterway capacity. The inland waterway system has an aging infrastructure that is operating at or near capacity, but it must remain viable to support certain key industries and agricultural interests.

The definition of capacity is an important consideration. Seasonal peaking is a key problem with waterway capacity, so average capacity is meaningless for a lock and dam. Operating efficiency is important unless physical capacity can be expanded, and new services such as container-on-barge will create new demands on waterway infrastructure. Political support will be a key factor in developing the required capacity in the future.